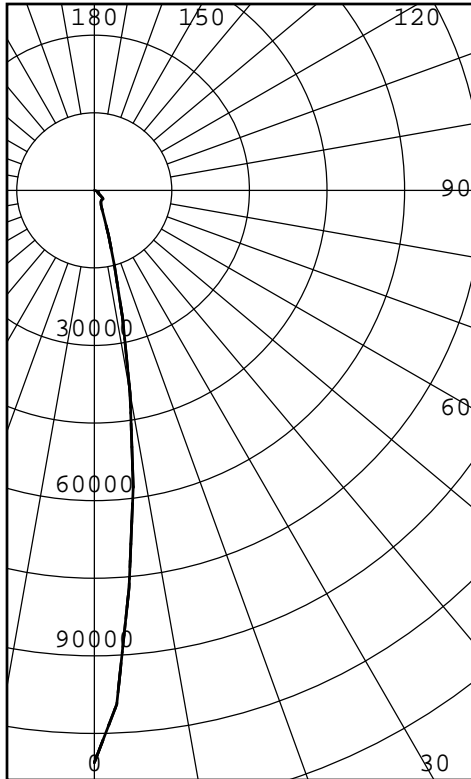


BIRNS - UNDERWATER FLOOD LIGHT
WITH SPECULAR HOUSING

ONE SYL. 1000 W HALOGEN PAR LAMP,CAT# 1000PAR64Q/NSP. LUMEN RATING = 19400 LMS.
OPERATING AT 120 VAC AND 1000 WATTS

INTENSITY(CANDLEPOWER) SUMMARY



ANGLE	MEAN CP	LUMENS
0	110625	
5	77114	6212
10	39833	
15	15165	4550
20	5717	
25	3146	1576
30	2581	
35	2419	1521
40	2301	
45	2396	1727
50	1650	
55	828	901
60	968	
65	921	829
70	448	
75	29	114
80	0	
85	0	0
90	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LAMP	%LUMINAIRE
0-30	12337	63.60	70.79
0-40	13858	71.44	79.51
0-60	16485	84.98	94.59
0-90	17429	89.84	100.00
40-90	3570	18.41	20.49
60-90	943	4.86	5.41
90-180	0	.00	.00
0-180	17429	89.84	100.00

** EFFICIENCY: 89.8% **

LUMINANCE SUMMARY CD./SQ.M.

S/MH: .3
SC: .3

ANGLE	MEAN CD/SQ M
45	87693
55	37335
65	56384
75	2936
85	0

CERTIFIED BY:

DATE:
JUN 11, 2003

PREPARED FOR:

BIRNS
OXNARD, CA

TESTED IN ACCORDANCE WITH IES PROCEDURES.

LIGHTING SCIENCES
7830 E. EVANS RD
SCOTTSDALE, AZ, USA 85260

CERTIFIED TEST REPORT No.

17958

BIRNS - UNDERWATER FLOOD LIGHT
WITH SPECULAR HOUSING

ONE SYL. 1000 W HALOGEN PAR LAMP, CAT# 1000PAR64Q/NSP. LUMEN RATING = 19400 LMS.
OPERATING AT 120 VAC AND 1000 WATTS

INTENSITY(CANDLEPOWER) DATA
IN 2.5 DEGREE STEPS

ANGLE	INTENSITY(CANDLEPOWER)	LUMENS
.0	110625	
2.5	99465	
5.0	77114	6212
7.5	57761	
10.0	39833	
12.5	25413	
15.0	15165	4550
17.5	9156	
20.0	5717	
22.5	3967	
25.0	3146	1576
27.5	2777	
30.0	2581	
32.5	2492	
35.0	2419	1521
37.5	2369	
40.0	2301	
42.5	2320	
45.0	2396	1727
47.5	2265	
50.0	1650	
52.5	1026	
55.0	828	901
57.5	883	
60.0	968	
62.5	1002	
65.0	921	829
67.5	731	
70.0	448	
72.5	187	
75.0	29	114
77.5	0	
80.0	0	
82.5	0	
85.0	0	0
87.5	0	
90.0	0	

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ONE SYL. 1000 W HALOGEN PAR LAMP, CAT# 1000PAR64Q/NSP. LUMEN RATING = 19400 LMS.
OPERATING AT 120 VAC AND 1000 WATTS

AVERAGE LUMINANCE DATA

CD./SQ.M. (FOOTLAMBERTS)

ANGLE	LUMINANCE
0	2851520 (832258)
30	76831 (22424)
40	77440 (22602)
45	87693 (25594)
50	66169 (19312)
55	37335 (10896)
60	49881 (14558)
65	56384 (16456)
70	33726 (9843)
75	2936 (857)
80	0 (0)
85	0 (0)

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 WITH SPECULAR HOUSING
 ONE SYL. 1000 W HALOGEN PAR LAMP,CAT# 1000PAR64Q/NSP. LUMEN RATING = 19400 LMS.
 OPERATING AT 120 VAC AND 1000 WATTS

COEFFICIENTS OF UTILIZATION

ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

CC WALL	90				80				70				50				30				10				0
	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
0	1.09	1.09	1.09	1.09	1.07	1.07	1.07	1.07	1.04	1.04	1.04	1.04	1.00	1.00	1.00	.96	.96	.96	.92	.92	.92	.92	.92	.92	.90
1	1.05	1.02	1.00	.98	1.03	1.00	.98	.97	1.00	.99	.97	.95	.95	.93	.92	.91	.90	.89	.88	.88	.87	.87	.87	.87	.85
2	1.00	.96	.93	.90	.98	.95	.91	.89	.96	.93	.90	.88	.90	.88	.86	.88	.86	.84	.85	.84	.82	.81	.81	.81	.81
3	.96	.90	.86	.83	.94	.89	.85	.82	.93	.88	.85	.82	.86	.83	.81	.84	.81	.79	.82	.80	.78	.77	.77	.77	.77
4	.92	.86	.81	.78	.91	.85	.81	.78	.89	.84	.80	.77	.82	.79	.76	.80	.78	.75	.79	.76	.75	.73	.73	.73	.73
5	.89	.82	.77	.73	.87	.81	.76	.73	.86	.80	.76	.73	.78	.75	.72	.77	.74	.72	.76	.73	.71	.70	.70	.70	.70
6	.85	.78	.73	.70	.84	.78	.73	.70	.83	.77	.73	.70	.76	.72	.69	.74	.71	.69	.73	.70	.68	.67	.67	.67	.67
7	.82	.75	.70	.67	.81	.74	.70	.67	.80	.74	.70	.66	.73	.69	.66	.72	.68	.66	.71	.68	.65	.64	.64	.64	.64
8	.80	.72	.68	.65	.79	.71	.67	.64	.78	.71	.67	.64	.70	.66	.64	.69	.66	.63	.68	.65	.63	.62	.62	.62	.62
9	.77	.70	.65	.62	.76	.69	.65	.62	.75	.69	.65	.62	.68	.64	.62	.67	.64	.61	.66	.63	.61	.60	.60	.60	.60
10	.75	.67	.63	.60	.74	.67	.63	.60	.73	.66	.63	.60	.66	.62	.60	.65	.62	.59	.65	.61	.59	.58	.58	.58	.58

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
 BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
 LUMINOUS OPENING OF LUMINAIRE.